RP

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May 28, 1986

RP:0058

Mr. Leslie S. Matsubara, Director
Environmental Protection and Health Services
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Matsubara:

Notice of Proposed Modification
NPDES Permit HI 0021059
Marine Culture Enterprises
Kahuku, Oahu

As requested, we have reviewed the above cited notice of a proposed modification to the NPDES permit held by Marine Culture Enterprises (MCE). We have been assisted in the review by Stephen Smith, Hawaii Institute of Marine Biology; Keith Chave, Oceanography; and Martha Diaz, Environmental Center.

It is our understanding that the proposed modification is intended to relax certain of the effluent-water-quality limitation that are imposed by the present permit but that are not met by the MCE effluent. We note that the discharge rates of the several pollutants will be more than doubled if the effluent discharge rate is increased from the current average of 15 mgd (identified as 15 m^3/day in a table on page 2 of the fact sheet accompanying the Notice) to the design flow of 33.6 mgd. We also note that it is proposed that the modified effluent limitations be effective for an interim period extending through January 1988, when "final" limitations will be established that will be effective through October 1989.

The permit notice indicates that the Department of Health has concluded that:

1. The present 15 MGD discharge appears to utlize only a narrow corridor in the Zone of Mixing.

2. Nearshore observations indicated that the areal extent of nutrient enrichment appears to be contained near the effluent discharge point.

3. In terms of the water quality based effluent based parameters, the impact on the receiving water appears to be less severe than originally anticipated.

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The only monitoring data available appear to be ambient-water-quality data collected during a 3-month pre-discharge period and a subsequent 9-month post-discharge period ending in October 1985. Although the data pertain to 10 coastal-water sites, comparative pre- and post-discharge data are available for only 6 of the sites, all of them apparently along the shoreline. Four of the sites are within the Zone of Mixing, a fifth is southeast of the Zone of Mixing, and the sixth is presumably northwest of the ZOM. Pre- and post-discharge means of various water-quality parameters are presented, but not standard errors or confidence limits, and the post-discharge data are not correlated with discharge rates. Furthermore, it must be noted, the pre- and post-discharge data pertain to different seasons of the year.

Definite conclusions as to the extent of the area in which ambient water quality is significantly affected by the discharge cannot be reached in the absence of offshore data, confidence limits for pre- and post-discharge means, pre- and post-discharge data collected during the same season, or correlation of the post-discharge ambient water-quality data with discharge rates. Effect on the benthic biota cannot be evaluated without comparable pre-and post-discharge surveys of the benthic biota.

Although there seems to be no evidence indicating clearly that an interim relaxation of the NPDES effluent limitation is not justified, we do not consider that the available information justifies relaxation for an "interim" period as long as 1½ years. We suggest that, at present, the proposed relaxation be effective for only the few months necessary to allow remedy of the deficiencies in the data and statistical analysis to which we have called attention above, and that either "final" or subsequent "interim" limitations be established on the basis of the information then available.

We consider that the extent to which exceedences of normal ambient water-quality standards are confined to the ZOM, and the biological effects of the effluent discharge within and outside the ZOM, are of greater significance than the water quality of the effluent itself. We assume that a possible change in area of the ZOM as well as its continuance will be examined when the term of the present ZOM expires.

Yours very truly,

Doak C. Cox
for Jacquelin Miller, Acting Associate Director

cc: Patrick Takahashi
Steve Chang
Stephen Smith
Keith Chave
Martha Diaz